REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

The specification is amended to correct a minor informality. Applicant submits no new matter is added.

Claims 1-5, 7-19 and 21-30 are pending in the present application. Claims 4, 8, 14, 18, 22, 28 and 30 are amended, and Claims 6 and 20 are canceled without prejudice by the present amendment.

In the outstanding Office Action, the drawings were objected to. Claims 4, 6, 8, 10, 12, 14, 18, 20, 22, 24, 26, 28 and 30 were objected to because of informalities. Claims 4, 6, 14, 18, 20, 28 and 30 were rejected under 35 U.S.C. § 102(b) as anticipated by Kataoka et al. (U.S. Patent No. 4,561,717, herein "Kataoka"). Claims 4, 8, 10, 12, 14, 18, 22, 24, 26, 28 and 30 were rejected under 35 U.S.C. § 102(b) as anticipated by Shiraishi et al. (U.S. Patent No. 5,774,249, herein "Shiraishi").

Regarding the objection to the drawings, that objection is respectfully traversed. Reference number 116 is mentioned in the specification at page 25, lines 17-19. Accordingly, it is respectfully requested this objection be withdrawn.

Regarding the objection to Claims 4, 6, 8, 10, 12, 14, 18, 20, 22, 24, 26, 28 and 30 for informalities, that objection is traversed.

Claims 4, 14, 18, 28 and 30 recite that a plurality of scanning optical systems ***each*** comprise an optical path inflection mirror. Thus, there are in fact multiple optical path inflection mirrors defined. Accordingly, it is respectfully requested this objection be withdrawn.

Claims 4, 6, 14, 18, 20, 28 and 30 were rejected under 35 U.S.C. § 102(b) as anticipated by Kataoka. That rejection is respectfully traversed.

Amended independent Claim 4 is directed to an optical scanning device that includes a plurality of scanning optical systems configured to scan different scanning surfaces. Each of the scanning optical systems include a light source, a deflector, a plurality of scanning lenses, an optical path inflection mirror, and an imaging lens. The light source is configured to emit a light flux. The deflector is configured to scan the light flux emitted from the light source. The deflector is commonly used in the plurality of scanning optical systems. The plurality of scanning lenses are configured to condense the scanned light flux to the scanning surface. The optical path inflection mirror is configured to inflect the scanned light flux and to decrease an amount of change in a relative scanning position of each scanning optical system caused by a temperature fluctuation in the plurality of scanning optical systems. The imaging lens includes a resin lens and is configured to lead the light flux emitted from the light source to the deflector. The plurality of scanning optical systems are provided in a sub-scanning direction. A difference in a number of optical path inflection mirrors between two of the plurality of scanning optical systems is set to zero or an even number. The optical path inflection mirror is configured among the plurality of scanning lenses.

Amended independent Claims 14, 18, 28 and 30 include similar features regarding the resin lens, the configuration of the inflection mirror relative to the plurality of scanning lenses, and decreasing the amount of change in a relative scanning position of each scanning optical system caused by a temperature fluctuation.

In a non-limiting example, Figure 2 illustrates that optical path inflection mirrors Ma1, Ma2, Ma'1, Ma'2, Mb1, Mb2, Mb'1, and Mb'2 are configured among the scanning lenses 5A, 5B, 6A, 6B, 7A and 7B. Further, in a non-limiting example, Figures 1, 2 and 7 illustrate that a change of an optical axis due to a temperature fluctuation is decreased by the optical scanning device shown in Figure 1.

Applicant recognized that a resin lens may be substituted for a glass lens to reduce the associated cost due to the material itself and processing of the material (page 2, lines 10-13). Applicant also recognized that a resin lens has a high linear expansion coefficient as compared to a glass lens resulting in a degradation of a produced image caused by temperature fluctuations (page 2, lines 14-22; and page 3, lines 6-10). Therefore, the present invention decreases a change of an optical axis due to a temperature fluctuation resulting from the use of a less expensive resin lens.

Kataoka does not teach or suggest use of a resin lens. Further, Kataoka does not teach or suggest decreasing the amount of change in a relative scanning position of each scanning optical system caused by a temperature fluctuation. Instead, Kataoka teaches an optical system for separating a plurality of laser beams from each other (abstract).

Accordingly, it is respectfully requested this rejection be withdrawn.

Claims 4, 8, 10, 12, 14, 18, 22, 24, 26, 28 and 30 were rejected under 35 U.S.C. § 102(b) as anticipated by Shiraishi. This rejection is respectfully traversed.

Shiraishi does not overcome the above-noted deficiencies of Kataoka. Further, Shiraishi does not teach or suggest an optical path inflection mirror configured among a plurality of scanning lenses. Accordingly, it is respectfully requested this rejection be withdrawn from similar reasons as discussed above.

Thereby, each of independent Claims 4, 14, 18, 28 and 30, and the claims dependent therefrom, patentably define over Kataoka and Shiraishi.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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